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THE EFFICACY OF THOUGHT-STOPPING AS A THERAPEUTIC TECHNIQUE

by

© DONALD KENNETH DEINES

A THESIS
SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
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FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "The Efficacy of Thought-Stopping as a Therapeutic Technique" submitted by Donald Kenneth Deines in partial fulfilment of the requirements for the degree of Master of Education in Counselling.

E. E. Ewart

Supervisor

J. G. Patterson

Bernard Schwartz

K. R. Crooks

Date June 28, 1973

ABSTRACT

Joseph Wolpe's contention that anxiety generated by perseverative, unwanted thoughts could be controlled by thought-stopping provided the basis of this research project. Specifically, the present study involved an investigation of the value of the "thought-stopping" procedure in the reduction of both the frequency of unwanted thoughts and the level of anxiety accompanying such thoughts.

Subjects were initially chosen from a total of one-hundred intersession students at the University of Alberta who volunteered to take part in the study. From the initial group of one-hundred, thirty-one students were finally chosen on the basis of objective test scores (Tavistock B Modified) which indicated the existence of unwanted thoughts. Final subjects were randomly assigned to a treatment Group A or a treatment Group B. Group A subjects were treated with the thought-stopping procedure over a three week period. Both groups were required to self-monitor the frequency of unwanted thoughts over a three week period.

The results indicated that each group was as ef-

fective as the other in self-reporting a decrease in the frequency of unwanted thoughts between pre- and post-treatment measures. However, Tavistock test scores which indicated the existence of unwanted thoughts decreased between pre- and post-treatment measures for only Group A subjects. Likewise, only Group A subjects reported a decrease in the level of anxiety between pre- and post-treatment measures as measured on the IPAT Anxiety Scale.

It was concluded that the thought-stopping technique has some value in decreasing the frequency of anxiety-inducing, unwanted thoughts. Implications for treatment and further research were discussed.

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CHAPTER I

THE THESIS PROBLEM

I. Introduction

Miss S. complained dismally that some of her old friends were regularly coming to her place of work at a local restaurant "just to bug her." She reported them ordering and paying for their food just like anybody else and admitted they did not insult her or abuse her in any other way. "But I know they wouldn't come for any other reason!", she continued. "Why this restaurant when there are all those others in the city? Just seeing them gets me so upset that I can't concentrate on my work for the rest of the day. I can only think they will be here to bug me again tomorrow."

During the next interview, Miss S. reported that her "friends" had not returned throughout the week. Nevertheless, she still thought of them often which she reported as "upsetting."

Perseverative trains of thought as experienced by Miss S. can be unrealistic, unproductive, and anxiety inducing, and are said to be a common clinical problem

(Wolpe, 1969, p. 224). If chronic, they are labelled "obsessions," or are included in the symptoms of paranoid reactions as "false beliefs" or "delusions." It seems logical that such thoughts should generate anxiety. It could be contended that the mere presence of a useless thought is unadaptive.

What might be done to remedy such a problem? Proponents of the psychoanalytical framework as exemplified by White (1964) would emphasize that the existence of anxiety inducing thoughts is a manifestation of a deeper, underlying conflict between the conscious and unconscious forces of the personality. Treatment would be directed at gaining insight into unconscious motivations and defense mechanisms in an effort to facilitate a corrective emotional experience for the client. In contrast, advocates of the humanistic framework as perhaps best represented by Rogers (cited in Hall and Lindzey, 1970) might state that such thoughts indicate an incongruence between the self-concept of a person and his total organismic experiences. Therapy would be directed at helping a client become increasingly aware of his true feelings and experiences in a completely non-threatening situation. Hitherto threatening feelings could then be assimilated into the self-structure. This assimilation may require rather drastic reorganization

in the self-concept of the client in order to bring it into line with the reality of organismic experience. The client will then be, in a more unified fashion, what he orgasmically is. A third approach which does not rely on personality constructs might also be valuable. Hence, there are those who would propose that such thoughts are simply learned. A thought may be defined as a behavior emitted by an organism but is on such a reduced scale that it cannot be observed by others (Skinner, 1953, p. 263). Such reduced behaviors are called "coverants" (Homme, 1965, p. 502) or "operations of the mind." Occurring at the covert level, these responses do not require any particular physical environment for their execution and may remain prevalent because the speaker himself is the listener. Treatment, then, would be directed at controlling these covert events and reducing the incidence of unwanted thoughts. The most straightforward means of doing so would be to modify eliciting conditions by manipulating the environment and behavioral consequences (Bandura, 1969, p. 586). However, unwanted thoughts may inevitably occur in everyday life, being independent of a particular physical environment. Hence, a person like Miss S. must develop an effective means of ideational self-control that can be utilized whenever the need arises.

One method of perhaps establishing self-control

of covert events deals directly with the intrusion of unwanted, anxiety inducing thoughts. The technique is called "thought-stopping" and is described in several pieces of relevant literature (Wolpe, 1958; Wolpe, 1969; Cautela, 1969; Lazarus, 1971a, 1971b). The procedure is as follows:

> *A thought-stopping program begins by asking the patient to close his eyes and verbalize a typical futile thought-sequence. During the verbalization, the therapist suddenly shouts "Stop!" and then draws attention to the fact that the thoughts actually do stop. This is repeated several times, and then the patient is urged to test the efficacy of the procedure by interrupting his unadaptive thoughts by saying "Stop!" subvocally. He is warned that the thoughts will return: but every time they do he must interrupt them again. The main effort later comes to be directed at learning to stifle each unwanted thought at birth. The moment it threatens to appear the patient inhibits it by concentrating on something else. The thoughts in many cases return less and less rapidly and eventually cease to be a problem.*
>
> (Wolpe, 1969, pp. 224-225)

Essentially, the anxiety inducing maladaptive thoughts are said to be recurrent until an aroused state is common for the individual. The individual so aroused is trained to suppress, curtail, or extinguish the troublesome thoughts through self command. That is, specific covertly used phrases interrupt the obsessive thought flow presumably permitting a decrement in anxiety or arousal. Wolpe

summarizes:

> *On the basis of personal experience, supported to some extent by the testimony of patients, I suggest that a habit of thought inhibition is reinforced by the anxiety-reducing consequence of each successful effort at thought inhibition.*
>
> (Wolpe, 1969, p. 226)

Moreover, the utilization of covert phrases to induce thought inhibition likely makes the execution of the procedure independent of any particular physical environment. The procedure is carried out "in one's mind" and can potentially be utilized whenever needed. Therefore, it seems well suited to the treatment of intrusive thoughts.

II. The Problem

As the importance of thought-stopping lies in inhibiting the occurrence of anxiety inducing thoughts, it is surprising that there is a notable lack of literature concerning this method. Evidence as to the efficacy of the technique does not exist to any extent. That is, the value of the technique as a clinical tool is still open to question. The present study was intended to further guage the value of thought-stopping. Specifically, the study represented an effort to see if: 1) the use of thought-stopping successfully eliminates preservative trains of thought, and 2) if use of the procedure reduces anxiety presumably associated with such thoughts.

Argument over the value of studying covert behaviors has also existed. Skinner (1953) assumes that inner states are lawfully determined by externally occurring events and, therefore, there is no need to be concerned with them in the control of behavior. This position is challenged by Homme (1965) who states that reasons for behaviorists' neglect of the control of private events are no longer valid. It is contended that private events as experienced by an individual can be manipulated by self-imposed controls. Consequently, one further aspect of this study involved the selection and recording of private events as target behaviors for manipulation. Hereafter, the selected private events (specifically the disturbing thoughts to be manipulated in treatment) will be referred to as "target coverants." A coverant refers to an "operation of the mind" or a "mental activity" (Homme, 1965).

Specifically, subjects were selected from intersession university students. Initial selection was based on scores from a screening device (objective test) given to a large population of students. People whose test scores indicated the existence of unwanted, recurring thoughts were interviewed to establish the target coverants, and then randomly assigned to two groups.

Subjects of one group were taught the thought-stopping technique while subjects of the second group were not.

Throughout the treatment phase, all subjects were required to self-monitor the frequency of the occurrence of intrusive thoughts. The frequency of such thoughts served as the basic variable to measure the efficacy of thought-stopping since the purpose of the technique is to extinguish unwanted thoughts.

Self-monitoring a behavior added a further implication to the present study. Recent investigations (McFall, 1970) have shown that self-monitoring of a behavior can have significant effects on the frequency of its emmission. Such effects apparently depend on a number of variables such as instructions given to a client or the desirability of the target behavior. As it may be assumed unwanted thoughts are undesirable, self-monitoring may have a reactive effect in somewhat reducing the frequency of such thoughts for all subjects. Thus, it is possible that the self-monitoring may contribute to reduction of unwanted thoughts obtained through the thought-stopping procedure.

A second more objective method to measure the frequency of unwanted thoughts was employed. Specifically, pre- and post-treatment measures of an objective test

which measures the existence of unwanted thoughts served as an index to judge the efficacy of the technique.

Measures of anxiety served as a second variable as the technique is said to reduce anxiety associated with unwanted thoughts. Anxiety level of an individual was obtained using an objective test. Pre- and post-treatment measures were used to monitor a change in anxiety level.

CHAPTER II

REVIEW OF RELATED LITERATURE

I. The Theoretical Frame of Reference

It could be argued that the idea of thought-inhibition is related to the psychoanalytical concept of "repression." Freud (1915) presented the first systematic outline of a theory or repression and sketched the relationship of repression to pathological behavior. The Freudian concept of repression reflects the dichotomy between unconscious and conscious aspects of the personality. An "instinctual impulse" becomes inoperative and goes into a state of repression when the pain associated with its satisfaction is stronger than the pleasure of its gratification. If, for example, an instinctual impulse arouses reactions of anxiety or anticipated punishment, an individual will reject or repress the "ideational" components of anxiety to avoid anticipated pain. The essence of repression, then, lies in the function of keeping something out of consciousness (Freud, 1915, p. 86).

Freud differentiated two separate phases of repression. In the first phase, "primal repression," the

ideational aspect of an impulse is denied entrance to the consciousness. In the second phase, "repression proper," attitudes, fantasies, or thoughts related to the repressed material are also denied entrance into the consciousness. According to Freud, reactions so repressed neither die out nor remain static. They remain in the unconscious and may even undergo further organization to change in character.

Aspects of repression are said to have far reaching implications for the personality. For one thing, repression is an unstable process and is subject to change over time. It is not an act which merely occurs once to dispose of an arousing impulse forever. Repression requires constant expenditure of effort and may itself be fatiguing. Secondly, the ideational aspects of an impulse must be considered separately from the emotional aspects of an impulse. The former may be successfully repressed while the latter, called the "charge of affect" (Freud, 1915, p. 91), may undergo distortion or change in the unconscious. Finally, repression is often not completely successful. Incomplete repression often accounts for the persistence of certain pathological symptoms. Anxieties, phobias, hysterical disorders, and compulsive rituals all represent a return of the repressed (Freud, 1915, p. 91). Presumably, the more irrational or bizarre the symptoms, the more has the repressed material been distorted in the

unconscious.

It should be noted that repression does not inhibit "verbal reactions." Freud (cited in Dollard and Miller, 1950, p. 198) states:

> *Now, too, we are in a position to state precisely what it is that repression denies to the rejected idea in the transference neuroses -- namely, translation of the idea into words which are to remain attached to the object.*

According to Freud, the repressed or the unconscious is the unverbalized.

Not only Freud, but also Dollard and Miller (1950) expound on a theory of repression. Accepting the view that what is repressed remains unverbalized, they state that repression represents a tendency to cause a general social deficiency in discussing or labeling those factors associated with the repressed impulse. Moreover, the repressed impulse is most often associated with fear or guilt. By remaining unverbalized, the repressed impulse is not under the control of "higher, mental or verbal processes." In other words, repression is said to be an automatic process of avoiding certain painful thoughts. Repression is maintained or reinforced by the drive reduction produced by avoiding anxiety or fear inducing verbal material.

Repression, in essence, is a "stopping thinking" response (Dollard and Miller, 1950). They explain with an illustration of a combat soldier.

> *During combat, the soldier is being stimulated by many external cues. He is also producing internal cues by his perceptual responses, his labeling of the salient features of what is going on, and his thoughts about what he is doing. The traumatic conditions in combat attach strong fear to all these cues. The fear generalizes to other similar cues, and the stronger it is, the wider it generalizes.*
>
> *Later when the soldier starts to think about what happened, his memories, or, to speak more exactly, thoughts and the images they provoke, are cues similar to the ones that were present in combat. Hence, these thoughts and images evoke extreme fear.*
>
> *As soon as the soldier stops thinking of his experience in combat, the cues eliciting the fear are removed and the fear is reduced. This marked reduction in the strength of fear strongly reinforces the response of stopping thinking. In mild cases this produces a disinclination to think and talk about combat; in severe cases it produces a complete inability to think or talk about the experience.*
>
> *We would expect the response of stopping thinking to become anticipatory like any other strongly reinforced response. Therefore, the patient should tend to stop thinking, or veer off onto a different line of thought, before he reaches the memory of a traumatic incident. He should learn to avoid not only thoughts about the fear-provoking incident but also the associations leading to those thoughts.*
>
> (Dollard and Miller, 1950, pp. 201-202)

Dollard and Miller go on to explain that repression over-

comes a strong drive learned during social training to orient and label things accurately. Stopping thinking becomes an anticipatory response to this labelling process. Hence, the drive motivating repression must be very intense. After the verbal cues eliciting the stopping thinking response drop out, the habit is referred to as "automatic" or "unconscious." The chief consequence of repression, then, is to eliminate the possibility of planned action in the presence of an anxiety inducing impulse. Verbal reasoning and labelling processes are, essentially, extinguished (Dollard and Miller, 1950, p. 219).

Central to the concept of repression is that a "mental thought" can elicit an intense emotional reaction. In fact, repression is often closely associated with a traumatic experience. In all likelihood, fear or anxiety can be associated with saying certain words or thoughts through direct punishment or withdrawal of positive consequences (Dollard and Miller, 1950). Through stimulus generalization, these emotional reactions are attached to the covert thoughts or sentences. Fear may also be directly attached to the presence of a thought as, for example, when a child has a "bad" thought just before he performs an act which is consequated in punishment. These thoughts, then, may produce an "anxiety state" in

that they anticipate punishment. If endowed with anxiety arousing power, a thought may act as a "noxious stimulus" capable of causing tissue disturbance of some kind that may lead to withdrawal behavior. This state would be correlated with pain or discomfort (Wolpe, 1958, p. 42).

In short, covert thoughts may themselves have the implications of actual neuroses. Correlated with this state would be reactions of the sympathetic nervous system as rapid and irregular heart rate and breathing, increased systolic blood pressure, dryness in the mouth, sweating, and muscular tension. Likewise, the parasympathetic nervous system would be activated, reflected in symptoms as stomach distress, diarrhea, defecation, and increased frequency of urination (Martin, 1971, p. 25). That is, a dual activation of the inhibitory and excitatory divisions of the hypothalamus as reflected in the dual activation of the autonomic divisions would result. Normally, these systems react reciprocally with one another so that when one division is activated, the other is inhibited. The simultaneous activation disrupts the "normal state." Gellhorn and Loofbourrow (1963, p. 197 - 204) suggest that a dual activation of the autonomic divisions constitutes a "pathological anxiety state."

Repression, in essence, may be seen as a mechanism

of dealing with this pathological anxiety induced by a thought or memory by removing from consciousness the noxious stimulus. Being an automatic process not under verbal control, repression is often regarded as a symptom of pathology.

Presumably only very intense thoughts or memories remain unconscious and are repressed. Other less intense thoughts, however, can remain conscious to a person and still elicit emotional reactions. Such thoughts may be perservative and intrusive, often distracting a person from a task at hand. Marks (1970), for example, describes the existence of "internal stimuli" as potentially anxiety evoking. These stimuli may elicit emotional reactions so intense as to be labelled "phobias of internal stimuli." In these situations the fear is inside the patient, and there is no external situation which can be avoided to reduce the fear. Marks discusses one example as a fear of suffering from a specific disease, such as cancer. The phobia consists of endless rumination about the possibility of contracting the disease. Closely associated with Marks' paradigm above is the obsessive - compulsive reaction. In this reaction anxiety is associated with the persistence of unwanted thoughts, ideas, or impulses to perform acts (Ullmann and Krasner, 1969, p. 306). These thoughts remain conscious to an individual and are

not repressed. Likewise, Dollard and Miller (1950) describe the existence of distracting stimuli which come from the mind itself. External stimuli may set up chains of thought which distract one from a task at hand.

A psychological mechanism for dealing with intrusive, yet conscious thoughts is "suppression." Closely related to repression, it also refers to stopping thinking and avoiding remembering (Dollard and Miller, 1950, p. 221). However, suppression is elicited from verbal cues and can be highly selective and easily reversible. In other words, suppression is under the control of higher mental processes. The process can be used to rid the mind of an unwanted and distracting thoughts but they are not lost to the unconscious. A thought can be retrieved at the desire of the individual. Essentially, the procedure refers to the controlling of conscious thoughts through "mental self-control." Dollard and Miller (1950) explain:

> *In order to suppress a train of thought, a person must take his attention off the stimuli which are producing that train of thought and turn his attention to some other cues which produce an incompatible train of thought.... The crucial consideration here is that thoughts can be manipulated to exactly the extent to which attention responses can be directed and concentrated.*
>
> (pp. 448-49)

In other words, suppression is operationalized as manipulating attention responses, such as "thinking about some-

thing else." It is a conscious process not necessarily associated with pathology. Utilizing suppression may actually facilitate coping with distracting thoughts.

A similar view is taken by Bandura (1969) in his discussion of "ideational self-control." If a person is to achieve greater voluntary control over his thought processes, he must manipulate variables which are capable of eliciting and sustaining competing ideational activities. One simple way of doing so is by directing one's attention to absorbing events which elicit other more pleasant cognitive activities. Engrossment in absorbing literary material, televised programs, vocational pursuits, or other projects may all provide effective means to exercise greater control over one's thoughts. An attentional response may serve a preventative function as well. In some cases an external stimulus may elicit a particular train of thought which, through association, activates other thoughts capable of generating strong emotional responses. By interrupting this sequence at its early stages by altering attention responses, the thought-produced arousal may be forestalled altogether.

Suppression or manipulating attention responses may not provide the only means to control distracting thoughts. Assuming that covert events obey the psychological laws of overt behavior, it should be possible to

influence significantly the nature and incidence of covert events. Homme (1965) points out that the absence or occurrence of covert events can be easily detected by the person doing the thinking. Thus, such responses can be most readily conditioned through "self-reinforcement operations" where responses are self-monitored, contingencies self-prescribed, and consequences self-produced. Homme suggests that Premack's (1965) differential probability hypothesis (i.e., any highly preferred activity has reinforcing properties) might be used to good advantage in contingency arrangement and selection of self-reinforcers. That is, the strength and incidence of certain classes of thoughts can be increased by making preferred activities contingent upon their occurrence. Anxiety inducing thoughts, then, can be replaced by self-reinforcement of more constructive lines of thought.

Thought-control may have a further implication than replacing anxiety inducing thoughts. Manipulation of mental activities may also facilitate ongoing overt behavior by removing intrusive thoughts. The assumption here, of course, is that thought processes are related to overt responses. This premise was expressed by Dollard and Miller (1950) who state that chains of thought can actually stop one from working. Vygotsky (1962) and Luria (1961) contend that thoughts play an even more fundamental

role as "regulators of behavior." They state that mental activities develop from a child's relationship with the adult world. The physical and biological dependency of an infant on his mother is later replaced by a relationship through overt speech. Adults shape the child's behavior by naming parts of his environment and giving orders. Simultaneously, the child learns new modes of behavior and develops new mental activities. However, after acquiring the faculty of speech, the child is capable of generating his own intentions and wishes, first in externalized and then "inner" speech. What he could previously do only with adult help, he is now able to do unassisted. In short, early in development the speech of others directs a child's behavior. Somewhat later, a child's own overt speech becomes an effective regulator of behavior. Finally, covert speech or thoughts assume a regulatory role, so that behavior is mediated by higher mental activities. This process of developing inner speech is called the "interiorization of language." In a sense, then, control of one's thoughts may be seen as a mechanism of establishing "inner regulators" of behavior. The goal of thought control is to replace distracting inner thoughts by others which facilitate or regulate adaptive behavior.

Michenbaum (1971) proposed that the presence or

absence of certain kinds of thought processes or inner speech are associated with particular manifestations of "abnormal behavior." For example, private speech of "impulsive" children consisted largely of immature self-stimulatory content (e.g., animal noises, repeated words, singing). Moreover, the incidence of self-stimulatory private speech did not decrease in goal-oriented task situations. Likewise, schizophrenics lacked effective self-instructive statements. The absence of effective regulatory inner speech in both of these groups was thought to have a bearing on the emmission of erratic behavior.

In contrast, "neurotic" patients were reported to emit a variety of maladaptive engendering statements. These covert thoughts provide symbolic cues which likely mediate overt behavior. Bandura (1969) has also emphasized that the information which observers gain from models is converted to covert perceptual-cognitive images and covert mediating rehearsal responses which are retained by a client and later used by him as symbolic cues to overt behavior.

The upshot of the relationship between overt and covert events is that thoughts can have a direct influence on overt behavior by providing an organism with

"internal stimuli." Depending on the reinforcement and past learning experience of an individual, mental thoughts could likely mediate, regulate, and facilitate adaptive behavior, or could generate negatively arousing internal stimuli which could mediate maladaptive responses.

This close interrelation between overt and covert events has been most explicitly recognized in a therapeutic technique called "rationale-emotive therapy" (Harper and Ellis, 1961). The basis of the approach lies in the assumption that the human individual has four closely interconnected processes: 1) He perceives or senses (i.e., hears, sees, etc.). 2) He moves or acts. 3) He feels or emotes (i.e., loves, hates, etc.). 4) He reasons or thinks (i.e., remembers, hypothesizes, etc.). All processes are said to overlap and are in some respects aspects of the same thing. Thus, one cannot sense without also moving in some way, feeling, or thinking. Carried one step further, maladaptive actions and intense emotions are accompanied by semi-logical, fixated, prejudiced, or bigoted thoughts. Ellis contends even more emphatically that in a sense, emotions and actions are results of thinking (Harper and Ellis, 1961, p. 27). Therefore, to control emotions and related actions, one may appreciably do so by changing the internalized sentences, self-talk, or thoughts with which one created them in the first place.

Essentially, Ellis endeavors to change the responses a person makes by modelling and shaping more rational self-evaluative statements.

In summary, thought-inhibition was first related to the concept of repression. It was contended that thoughts could generate intense emotional reactions similar to "anxiety states" in neuroses. The concept of suppression was then reviewed as a mechanism by which one could consciously gain control over thought processes. Other methods of developing ideational self-control were introduced including one which proposed that making a pleasant thought should be contingent on some preferred activity. Finally, the relationship between thoughts and overt behavior was discussed along with a therapeutic technique which emphasizes the importance of self-verbalizations.

II. Clinical Applications of the Technique

It will be recalled that empirical studies utilizing the thought-stopping technique with groups of subjects do not exist to any extent in the literature. Therefore, it seems pertinent to review reports of use of the procedure with individual clinical cases.

Wolpe (1969) attributes the origin of the technique to Alexander Bain in 1928, and its introduction as a

therapeutic technique to J. G. Taylor in 1955.

Application of the treatment to an obsessive-compulsive neurosis is reported by Taylor (1963). The patient, a woman of forty who had been plucking out eyebrows compulsively for thirty-one years, was instructed to arrest the compulsive urge at the commencement to move her hand by saying, "No, stay where you are!" The implication was that the act was preceded by an internal urge or thought to "pluck." The thought led to an itching of the brow which was preliminary to the plucking act. It was reasoned that by extinguishing the initial impulse, the entire compulsive "chain" of responses would be broken. The act was overcome in ten days with no evidence of symptom substitution.

Similarly, Stern (1970) reported utilizing the procedure with a patient of twenty-seven years who for ten years had been obsessed with preoccupations and fears. He was worried over almost every action he performed as, for example, turning off taps or the car ignition. After such actions he would persistently ruminate about whether he had performed them correctly. The worrying had become so intense that he could not attend fully to other activities. Consequently, his performance at work deteriorated considerably. Treatment was carried over fifteen sessions given three times weekly. The patient was asked to con-

struct a hierarchy of his obsessional fears, those lowest in the hierarchy being dealt with first. The first part of each session was devoted to training the patient to relax. When relaxation was achieved, he was asked to imagine himself performing an action he worried about and then instructed to "worry" for fifteen seconds. At this point, a sharp noise was made by the therapist (tapping on a desk with a pencil) and the patient shouted "Stop!" simultaneously with the noise. Eventually, the patient said "Stop!" subvocally. As each symptom was controlled, they moved up to the next in the hierarchy. The patient apparently became very competent at the technique and was able to use it to control symptoms in his everyday life situation. He found that he could now cope with work more effectively and could more easily concentrate on other verbal tasks.

A third application of the treatment to an obsession is reported by Yamagami (1971). The subject was a graduate student whose main complaints were verbalizing in thought the names of colours, counting numbers, separating words into syllables, and typing words in fantasy. When treatment started, the colour obsession occurred about 100 to 120 times a day with other obsessions approximately one-tenth as frequent. Daily activities of the patient were consequently greatly hampered. Treatment

began with a focus on the colour obsession. Coloured sticks were placed in front of the subject. He was told to look at them and signal the onset of an obsessional thought by raising a finger. At this time the therapist shouted "Stop!" and the subject shouted "Stop!" immediately after. The shout was later replaced by a subvocal instruction whenever the thought came to mind.

Four variations of the technique were used. First, the therapist shouted "Stop!" at random one to three minutes after his obsessional behavior had been signalled. In the second variation, after the therapist shouted "Stop!" the subject was instructed to imagine a pleasant scene conducive to relaxation. This procedure was done to prolong the non-obsessional period. The third variation had an electric shock substituted for the shout by the therapist and was administered one to three minutes at random after the obsession began. The intensity of the shock was increased gradually over a number of trials. The subject was instructed to withstand it as long as possible while indulging his obsession. When it could no longer be endured he shouted "Stop!" and the shock was terminated. In the fourth variation, the subject was given a brief but strong shock whenever the therapist shouted "Stop!" The shout followed by the shock occurred one to three minutes after the obsession had begun. The

subject had to shout "Stop!" immediately after the shock.

Results were dramatic. The frequency of the colour obsession as recorded by the subject decreased remarkably after five sessions when the first two variations were used. At the same time, the rate of increase of duration of non-obsessional periods as recorded by the subject progressed, but mostly when the third and fourth variations of the procedure were used. Oddly enough, during the second variation which was particularly designed to increase the non-obsessional period, the subject reported a slight decrement in progress. After seventeen sessions, the colour obsession had decreased by ninety-five per cent and could be easily controlled subvocally. The other non-treated obsessions were reduced spontaneously by half their original incidence. At a seven month follow-up, the colour obsession was reported to be totally extinguished.

Kumur and Wilkinson (1971) reported an application of the treatment of four phobias of "internal stimuli." Such phobias as reviewed by Marks (1970) include fears of death, illness, harming other people, etc. Three patients suffered from fears of illness, two of contracting cancer, and one of a heart attack. The other had a fear of death. The program started with each patient imagining a pleasure

evoking thought such as a beautiful natural scene. A tape recording of bird songs and the sound of a waterfall were played to the patient to help evoke these pleasant thoughts. Having established this, the patient was then instructed to close his eyes and verbalize a typical unpleasant thought sequence from past experience. During verbalization the therapist shouted "Stop!" and pointed out that the thoughts did stop. On the next trial, the tape recording was switched on immediately after the shout and the patient was told to imagine the beautiful scene. He was then instructed to say "stop" subvocally and then imagine the scene whenever an unpleasant thought came to mind. Relaxation procedures were also taught to each client.

In all cases, treatment with thought-stopping consisted of five, twenty or thirty minute sessions. All patients were asked to keep a daily record of the occurrence of unpleasant thoughts. The frequency of phobic thoughts was reduced considerably during the treatment program. Moreover, decreases in scores on the Eysenck Personality Inventory and the Willoughby Neuroticism Schedule between pre- and post-treatment measures were noted for all patients. A twelve week follow-up showed that patients remained anxiety-free although the thoughts were occasionally experienced. The authors

also point out that the patients failed to respond to other methods of treatment.

Thought stopping has also been used and reported by Gershman (1970) to help treat a college student with a transvestite fantasy. The fantasy consisted of imagining himself wearing women's clothing which was aroused by such stimuli as seeing girls in class or seeing pictures of girls in magazines. Basically, he was asked to evoke the fantasy, stop it, and then shift to some other reinforcing thought. By the third session, he could conjure up the image and eliminate it. Although a number of associated problems were treated by other methods, the "stop" technique was said to provide an effective means of controlling the fantasy in everyday-life situations.

Finally, Cautela (cited in Franks, 1969, p. 323-340) proposed that the procedure be used as a method of establishing a kind of "self-control." A self-control mechanism is defined as "a response repetoire in which an individual can make a response to increase or decrease the response probability of undesirable behavior." Teaching self-control involves: 1) providing individuals with responses he can initiate whenever necessary to change the probability of undesirable responses; and 2) instructing the individual when and under what conditions to make the self-controlling responses. Specific to thought-stopping,

the word "Stop!" (self-controlling response) prevents an undesirable thought from occurring. The procedure is described as one technique which an individual can learn to help prevent or eliminate further maladaptions away from the therapy relationship.

In summary, a review of relevant literature reveals that while reported use of the technique is scanty, thought-stopping shows some potential as an effective treatment for disorders labelled as obsessional neuroses, fears of "internal stimuli," or unwanted fantasies. By using the technique, one recognizes the existence of private events and assumes they may have a significant bearing on the ability of a person to cope with or adjust to his environment. Generally speaking, the technique may offer a simple way of controlling disruptive mental activities and establishing alternative, competing thoughts of a more constructive nature. However, the technique is often used in conjunction with other therapies. Consequently, the efficacy of the procedure used alone over a wide range of subjects has been largely unassessed.

CHAPTER III

METHODOLOGY

I. Subject Selection

Subjects were selected from five undergraduate and two graduate courses offered during the university spring session. Selection occurred from a population of about one-hundred students who volunteered to take part in the study. These people were asked to complete an objective test where affirmative responses to statements indicated the intrusion of unwanted thoughts. The highest scorers based on the absolute number of affirmative answers were finally chosen as subjects. There were thirty-one people in the final sample. Scores on the objective test for chosen subjects ranged from 13 to 24, with a mean score of 16.38 and a standard deviation of 3.345.

These thirty-one subjects were then interviewed to substantiate the existence of unwanted thoughts, and then administered the IPAT Anxiety Scale. The questions asked to clients to substantiate the existence of unwanted thoughts in the first interview are recorded in Appendix C.

II. Instruments

Initial Screening Device

The initial screening device consisted partly of items taken from the Tavistock Self-Assessment Inventory. The original inventory contains 867 items or statements to which a subject may respond "true" or "false," as the statement predominantly applies to himself. The test was devised to reveal specific psychological disturbances of prospective clients and to discover psychological differences between contrasting clinical groups (Sandler, 1954).

Statements included in the present study were chosen from an item pool of forty statements comprising the obsession scale of the Tavistock Inventory. Research by Sandler and Hazari (1960) using the scale suggests that two types of obsessional personalities could be identified from relatively independent constellations of true-false answers to the items. The first (Group A) presents a picture of an exceedingly meticulous, thorough, and systematic person. The second (Group B) represents a person whose daily life is disturbed through the intrusion of unwanted thoughts and impulses into his conscious experience. The corresponding constellation of items was of specific interest in the present study. Only these "B" items were chosen for the present questionnaire and are shown in Appendix A.

As the number of items chosen from the above inventory is rather small, additional relevant items

dealing with the existence of unwanted thoughts were chosen from the Minnesota Multiphasic Personality Inventory (Dahlstrom and Welsh, 1968), the Leyton Obsessional Inventory (Cooper, 1970), and the Forty-Eight Item Counselling Evaluation Test (McMahon, 1963). Selection of these items for the present screening device was determined basically by content validity considerations by four judges who were instructed as follows:

> *On a separate sheet of paper write the number of the items to which you think a "yes" response would indicate that a testee is "troubled by the existence of a perseverative and unwanted thought."*

Judges were doctoral students in Educational Psychology who were all experienced in the use of objective personality tests. An item was included in the screening device if it was independently chosen by all four judges. These items comprised a "composite scale" and is also recorded in Appendix A.

Each statement on the screening device could be answered "yes" or "no" as the statement applied to a person. Final selection of subjects was based on the total number of "yes" responses to the Tavistock-Composite Scale.

To check on reliability, the entire screening device was administered to a sample of twenty university

students and was readministered three weeks later. A test-retest reliability figure of .8138 was calculated for the entire scale of twenty-eight items. On the Tavistock "B" scale, a coefficient of .756 was obtained. The reliability coefficient on the Composite scale for the same period was .697.

A correlation (Pearson product-moment coefficient) based on separate scores (number of "yes" responses) from the Tavistock "B" items and the Composite scale was also computed from the original sample of one-hundred students initially screened. The resulting figure of .624 suggests that the two scales measure a similar event and contributes to the construct validity of the screening device.

The screening device served only to establish a population who would admit through a questionnaire that they are troubled by preservative thought trains. Further clinical diagnoses were not attempted.

The IPAT Anxiety Scale

The IPAT Anxiety Scale is a brief, stencil-scored questionnaire for the assessment of general free anxiety as distinct from general neurosis or psychosis. It consists of forty items to which a person may respond "true," "false," or "in between," as the statement predominantly

applies to himself.

Reliability coefficients for the total anxiety score range from .80 to .93 depending on the type of reliability and the nature of the group tested. The level of reliability was considered more than adequate for the purpose of the present study.

Evidence for test validity is varied and impressive. Construct validity coefficients of .85 to .90, based on replicated factor-analytic researches involving questionnaire items, are quoted in the manual. The test score correlates significantly with self-report, physiological, and psychiatric measures of anxiety. Moreover, test scores have distinguished very sharply between "normal" populations and high anxiety clinical cases.

Easy administration and quick scoring make the test useful as a clinical tool to gauge anxiety level of clients. The test has also been used to measure anxiety level over a period of time, making it useful as a dependent variable.

III. Procedure and Research Design

The screening procedure was devised to ensure a selection of a relevant clinical population of those people who could be treated with thought-stopping. Sub-

jects were randomly assigned to Treatment Group A or Treatment Group B. Group A consisted of fifteen people and were treated with thought-stopping along with instructions to self-monitor the frequency of unwanted thoughts. Group B consisted of sixteen people and were instructed only to monitor the frequency of unwanted thoughts. During the course of the study, one person dropped out from each group before termination.

During the first interview when the anxiety scale was administered, subjects specified one thought or group of thoughts that were troublesome and unwanted. A period of six days was allotted where all participants monitored the daily frequency of their selected coverants. A record of the frequency was recorded by each person on five by nine inch cards. The six day monitoring period was designed to allow subjects to adjust their counting.

The frequency of unwanted thoughts during the last two days before treatments began was defined as the initial operant level of the target thoughts. A two-day period was chosen as the initial level to allow for fluctuations which may occur from day to day.

The Treatment Phase

Subjects assigned to Treatment Group A were seen two times per week on alternate days during different time

blocks. There was a total of six treatment sessions lasting about twenty to thirty minutes each. During the first session, each subject was taught the basic technique of thought-stopping. They verbalized a troublesome thought during which the therapist shouted "Stop!" It was then pointed out that the thought actually did stop. This procedure was repeated three times after which the subject interrupted the intrusive thought by saying "stop" subvocally. Subjects were warned that the thought or thoughts may recur, but every time they do, he was to inhibit them by saying "stop" subvocally. In addition, subjects were instructed to stifle unwanted thoughts by concentrating on a more productive train of thought or imagining themselves partaking in a pleasant activity. Self-monitoring of target coverants occurred during the entire treatment phase of six sessions plus two days after. Subjects practiced the technique throughout the remaining sessions.

Subjects assigned to Treatment Group B were also seen twice per week in different time blocks on alternate days. However, they were required to only report the frequency of unwanted thoughts as recorded throughout the three week treatment phase plus two additional days after. Group B subjects reported on different days than Group A subjects.

The Post-Treatment Phase

Two days after the treatment phase, each subject was again administered the initial screening device and the anxiety scale. Group B subjects were also taught the technique of thought-stopping as they may have benefitted from its use.

The final operant level of the frequency of intrusive thoughts was defined as the number of thoughts recorded in the last, two-day monitoring period after the treatment phase.

IV. Variables and Hypotheses

The variables were introduced in Chapter I. They will now be specifically operationalized and related to the main hypotheses.

Frequency of Unwanted Thoughts

The frequency of unwanted thoughts was measured by self-reports made by subjects. This measure was used to examine if a decrease would occur in the incidence of target coverants as a result of therapy with thought-stopping since the technique is purposed to extinguish perseverative thoughts. Frequencies of thoughts at the initial and final operant levels were used to detect the purposed decrease. Thus, the first hypothesis is:

1. *There will be a significant decrease in the frequency of unwanted thoughts as reported by Group A subjects between the initial operant level of thoughts and the final operant level of thoughts.*

It may be recalled from Chapter I that evidence exists which shows that self-monitoring of a behavior affects the frequency of emission of that behavior. How it affects the frequency of emission depends on such things as the desirability of that behavior so that an undesirable behavior would be decreased in frequency and a desirable behavior would be increased. Applied to the problem at present, unwanted thoughts are by definition undesirable. Hence, the second hypothesis is:

2. *There will be a significant decrease in the frequency of unwanted thoughts as reported by Group B subjects between the initial operant level and the final operant level of unwanted thoughts.*

As it may be supposed that thought-stopping would contribute to the effects of self-monitoring, the third hypothesis is:

3. *There will be a significantly greater decrease in the frequency of unwanted thoughts as recorded by Group A subjects than by Group B subjects between the initial and final operant levels of unwanted thoughts of these two groups.*

The existence of unwanted thoughts may also be inferred from the score of the initial screening device. This score was based on the number of "yes" responses to

items implying the intrusion of unwanted thoughts. Following a thought-stopping program, it may be supposed that there would also be a reduction in the score of the screening device in a post-treatment measure. The fourth hypothesis, then, is:

> 4. *There will be a significant decrease in the number of "yes" responses to items of the Tavistock-Composite scale for Group A subjects between pre- and post-test measures.*

As self-monitoring was hypothesized to decrease the frequency of unwanted thoughts, the fifth hypothesis is:

> 5. *There will be a significant decrease in the number of "yes" responses to items of the Tavistock-Composite scale for Group B subjects between pre- and post-test measures.*

As it may be assumed thought-stopping would contribute to the effects of self-monitoring, the sixth hypothesis is:

> 6. *There will be a significantly greater decrease in the number of "yes" responses to items of the Tavistock-Composite scale for Group A subjects than Group B subjects between pre- and post-test measures.*

Anxiety Level

The measure of anxiety was defined as the total raw score obtained from the IPAT Anxiety Scale. As thought-stopping is said to reduce the level of anxiety

by reducing the incidence of unwanted thoughts, the seventh hypothesis is:

> 7. *There will be a significant decrease in the level of anxiety for Group A subjects between pre- and post-treatment test measures.*

As it was hypothesized that self-monitoring would decrease the frequency of unwanted thoughts, the eighth hypothesis is:

> 8. *There will be a significant decrease in the level of anxiety for Group B subjects between pre- and post-treatment measures.*

Since thought-stopping may compound self-monitoring effects, the ninth hypothesis is:

> 9. *There will be a significantly greater decrease in the level of anxiety for Group A subjects than Group B subjects between pre- and post-treatment measures.*

V. Analysis

Hypothesis one, two, four, five, seven, and eight were all related to the concern as to whether measures within a single group would decrease over a period of time. Means of each measure between pre- and post-treatment periods were calculated. In each case, a t-test for correlated samples was employed to analyze if differences were significant.

Hypotheses three, six and nine were all concerned

with differences of measures between Group A and Group B. The means of pre- and post-treatment measures were calculated for each group. In each case, a t-test of the differences between two means of independent samples was employed to analyze if the mean difference for one group was significantly different from the other.

CHAPTER IV

RESULTS AND CONCLUSIONS

The reporting of results follows the traditional format including a restatement of the hypotheses, the pertinent statistics, and the appropriate conclusions. Additionally, although the target coverant or coverants were individually specified, treatment for all subjects within a group was the same. Thus, the results were analyzed on the basis of group means and standard deviations of measures to arrive at the appropriate statistic. A summary of the record kept for each subject throughout the treatment phase is shown in Appendix B.

Hypothesis 1

The hypothesis that a significant decrease would occur in the frequency of unwanted thoughts between initial and final operant levels for Group A subjects was supported by the data. A summary and analysis of the results are presented in Table 1.

Table 1

Summary, Test of Significance of Difference of Frequency Between Initial and Final Operant Levels of Thoughts for Group A

	Mean	S.D.	t	df	p
Initial Operant Level	31.86	28.84			
Final Operant Level	8.86	6.36			
			9.85	13	<.0005

Conclusion: Intervention with the thought-stopping technique produced a significant decrease in the frequency of intrusive thoughts as reported by Group A subjects.

Hypothesis 2

The hypothesis that a significant decrease would occur in the frequency of unwanted thoughts between initial and final operant levels for Group B subjects was supported by the data. A summary and analysis of the results are presented in Table 2.

Table 2

Summary, Test of Significance of Difference of Frequency Between Initial and Final Operant Levels of Thoughts for Group B

	Mean	S.D.	t	df	p
Initial Operant Level	25.87	29.01			
Final Operant Level	17.3	23.88			
			1.82	14	<.05

Conclusion: Intervention by counting the frequency of unwanted thoughts produced a significant decrease in the frequency of such thoughts as reported by Group B subjects.

Hypothesis 3

The hypothesis that there would be a significantly greater decrease in the frequency of unwanted thoughts between initial and final operant levels for Group A subjects than Group B subjects was not supported by the data. A summary and analysis of the results are presented in Table 3. While at the initial operant level, group means of the frequency of unwanted thoughts did not differ sig-

nificantly. Some change was noted for both groups at the final operant level, resulting in a slightly higher mean for Group B than Group A. The difference between the two group means here, however, was again not significant.

Table 3

Summary, Test of Significance of Difference of Frequency Between Initial and Final Operant Levels of Thoughts Between Groups A and B

	Mean	S.D.	t	df	p
Initial Operant Level (Group A)	31.86	25.87			
Initial Operant Level (Group B)	28.84	29.01			
			.557	27	N.S.
Final Operant Level (Group A)	8.86	17.3			
Final Operant Level (Group B)	6.36	23.88			
			1.32	27	N.S.

Conclusion: Intervention with the thought-stopping program did not produce a significantly greater decrease in the self-reports of the frequency of unwanted thoughts during the treatment phase than was produced by only self-

monitoring the frequency of unwanted thoughts.

Hypothesis 4

The hypothesis that there would be a significant decrease in the number of "yes" responses to items on the Tavistock-Composite Scale for Group A subjects between pre- and post-treatment measures was supported by the data. A summary and analysis of the results are presented in Table 4.

Table 4

Summary, Test of Significance of Difference in Frequency of "Yes" Responses to Tavistock-Composite Scale Between Pre- and Post-Treatment Measures for Group A

	Mean	S.D.	t	df	p
Pre-treatment Score	16.36	3.54			
Post-treatment Score	10.07	5.55			
			4.95	13	<.0005

Conclusion: Intervention with the thought-stopping procedure produced a significant decrease in the objective test score between pre- and post-treatment measures.

Hypothesis 5

The hypothesis that there would be a significant decrease in the number of "yes" responses to items of the Tavistock-Composite Scale for Group B subjects between pre- and post-treatment measures was not supported by the data. A summary and analysis of the results are presented in Table 5.

Table 5

Summary, Test of Significance of Difference in Frequency of "Yes" Responses to Tavistock-Composite Scale Between Pre- and Post-Treatment Measures for Group B

	Mean	S.D.	t	df	p
Pre-treatment Score	16.4	3.27			
Post-treatment Score	15.2	4.14			
			1.38	14	N.S.

Conclusion: Intervention by only counting the frequency of unwanted thoughts did not result in a significant decrease in the objective test score between pre- and post-treatment measures for Group B subjects.

Hypothesis 6

The hypothesis that a significantly greater decrease in the number of "yes" responses to items of the Tavistock-Composite Scale would result for Group A subjects than Group B subjects between pre- and post-treatment measures was supported by the data. Mean scores of pre-treatment measures of both groups did not differ significantly. Inspection of the mean scores of post-treatment measures, however, showed some change in both groups, resulting in a significantly lower mean score for Group A than Group B. A summary and analysis of the results are presented in Table 6.

Table 6

Summary, Test of Significance of Difference in Frequency of "Yes" Responses to Tavistock-Composite Scale Items Between Pre- and Post-Treatment Measures Between Groups A and B

	Mean	S.D.	t	df	p
Pre-treatment Score (Group A)	16.36	3.54			
Pre-treatment Score (Group B)	16.4	3.27			
			.213	27	N.S.

(continued)

Table 6 (continued)

	Mean	S.D.	t	df	p
Post-treatment Score (Group A)	10.07	5.55			
Post-treatment Score (Group B)	15.20	4.14			
			2.80	27	<.005

Conclusion: Intervention with the thought-stopping procedure produced a significantly greater decrease in scores on the Tavistock-Composite Scale than intervention with self-monitoring only.

Hypothesis 7

The hypothesis that there would be a significant decrease in the level of anxiety for Group A subjects between pre- and post-treatment test measures was supported by the data. A summary and analysis of the results are presented in Table 7.

Table 7

Summary, Test of Significance of Difference in Level of Anxiety Between Pre- and Post-Treatment Test Measures for Group A

	Mean	S.D.	t	df	p
Pre-Treatment Measure	39.21	12.55			
Post-Treatment Measure	30.93	9.58			
			2.53	13	<.025

Conclusion: Intervention with the thought-stopping technique contributed to a decrease in the level of anxiety for Group A subjects as measured by the IPAT Anxiety Scale.

Hypothesis 8

The hypothesis that there would be a significant decrease in the level of anxiety for Group B subjects between pre- and post-treatment measures was not supported by the data. A summary and analysis of the results are presented in Table 8.

Table 8

Summary, Test of Significance of Difference in Level of Anxiety Between Pre- and Post-Treatment Test Measures for Group B

	Mean	S.D.	t	df	p
Pre-treatment Measure	41.80	11.53			
Post-treatment Measure	40.13	11.87			
			.655	14	N.S.

Conclusion: Intervention by self-monitoring did not result in a significant change in the level of anxiety between pre- and post-treatment measures for Group B subjects.

Hypothesis 9

The hypothesis that there would be a significantly greater decrease in the level of anxiety for Group A subjects than Group B subjects between pre- and post-treatment measures was supported by the data. Mean pre-treatment scores of both groups did not differ significantly. Post-treatment scores, however, showed a slight decrease in both group means, resulting in a significantly greater decrease for Group A than Group B. A summary and analysis

of the data are presented in Table 9.

Table 9

Summary, Test of Significance of Difference in Level of Anxiety Between Pre- and Post-Treatment Measures Between Groups A and B

	Mean	S.D.	t	df	p
Pre-treatment Measure (Group A)	39.21	12.55			
Pre-treatment Measure (Group B)	41.80	11.53			
			.577	27	N.S.
Post-treatment Measure (Group A)	30.93	9.58			
Post-treatment Measure (Group B)	40.13	11.87			
			2.31	27	<.025

Conclusion: Intervention with the thought-stopping technique produced a greater decrease in the level of anxiety between pre- and post-treatment measures than did intervention by only self-monitoring.

In summary, both Groups A and B showed a significant decrease in the frequency of unwanted thoughts in their self-reports. There was not sufficient evidence

to support that group means of the final operant level of thoughts differed from one another. However, a significantly greater mean decrease in the Tavistock-Composite Scale score for Group A than Group B was produced between pre- and post-treatment measures. Likewise, a significantly greater decrease in the level of anxiety was produced for Group A than was produced for Group B over the treatment sequences.

CHAPTER V

DISCUSSION

The results of the study suggest that the thought-stopping technique provides an effective way to deal with perseverative, anxiety-inducing thoughts. That is, the frequency of such thoughts was remarkably reduced for Group A subjects throughout the therapy phase as corroborated by a reduction in self-reports and objective test scores. Moreover, the reduced incidence of troublesome thoughts was accompanied by a decrease in the level of anxiety, lending some support to Wolpe's (1969) claim that the habit is reinforced by anxiety reduction.

The results also provided several insights into the effects of self-monitoring of covert behaviors. At the outset, self-monitoring appeared to be as effective in decreasing the frequency of unwanted thoughts as the "stop" technique, as measured by self-reports. That is, the "reactive effects" of self-monitoring as suggested by McFall (1970) in reducing the frequency of emission of "undesirable" behaviors appeared to apply to the specified covert events. However, the reduction in the self-report measure was not accompanied by a reduction

in the objective test score, nor by a reduction in the level of anxiety for the self-monitoring group. It seems more likely, then, that the reactive effects of self-monitoring were restricted to the recording behavior of self-reporting and not to the actual existence of unwanted thoughts. The behavior of reporting fewer and fewer thoughts may have been reinforced by subjects' perceptions of a favorable impression given by the therapist at each reporting session. Such a phenomenon may be similar to the familiar "halo effect."

Implications for Therapy

The thought-stopping technique may be potentially applied to any setting where the goal of therapy is to reduce the frequency of unwanted thoughts. As reported in Chapter II, such settings might be treatment for obsessions, phobias of "internal" stimuli (e.g., fears of death), or unwanted fantasies.

Once learned, the technique can be easily applied away from a therapy setting. Generalization of results from therapy to a client's everyday environment should be a relatively simple procedure. As the technique relies on covert instructions, it requires no particular physical environment for execution. In short, one advantage of the technique is easy application to any setting.

That the technique may be used easily outside a therapy setting also places a further responsibility on the therapist. Teaching the technique would only be part of his job. Perhaps equally as important is teaching a client when to use it. Initially, the client and the therapist must agree on what constitutes a useless, maladaptive thought. For potential use as a future response to a similar problem outside a therapeutic setting, the client must be given an idea of what constitutes a useless, maladaptive thought, "in general." Thus, it might be argued that part of therapy using this technique should be devoted to ensuring that the procedure is properly used in the life situation away from the therapy session.

The technique may also be useful in modifying "what clients say to themselves." If one agrees with the contention proposed by Harper and Ellis (1961) that neuroses are accompanied by prejudiced, bigoted thoughts, the thought-stopping technique may provide a mechanism to appreciably change self-talk. Bigoted thoughts might first be extinguished, then replaced with more adaptive or realistic verbalizations. Specifically, the covert response "Stop!" may be rehearsed as a verbal, symbollic mediator to other verbalizations or self-talk. As a verbal mediator, the "Stop!" response may even be applied

to cases where a decrease in the emmission of an overt behavior is desired, such as smoking or over-eating.

Implications for Further Research

As the present study was based on a sample of university students, it might prove beneficial to examine the use of the technique with other samples, such as "neurotic, hospitalized" patients. Since the present sample was largely female, efforts in further research should be made to select a more representative sample as to the male sex.

One further aspect of the technique not investigated in the present study was the replacement of maladaptive thoughts with more adaptive ones. Further studies might consider measuring the decrease in frequency of maladaptive thoughts along with the increase in frequency of more adaptive ones.

Certain methodological implications of the present study might warrant further research. Whereas accurately measuring the frequency of covert events awaits further technological advancements, the efficacy of the technique might be judged from other standards. For example, one might investigate if students who ruminate over examinations improve their grades if treated with thought-stopping. Similarly, if applying the technique to one who devaluates himself through self-

verbalizations, one might investigate if the incidence of more "positive" overt self-statements increase as a result of therapy. In short, the efficacy of the technique might be more firmly established if it was judged against observable, more easily validated criteria.

The technique may also be applied to investigate further the relationship between overt and covert events. For example, one might investigate if the frequency of undesirable behaviors such as smoking or over-eating decrease as a result of learning the covert response "Stop!" The subject would be instructed to say "stop" subvocally every time he feels the urge to emit an undesirable overt behavior.

Finally, certain variations of the technique may be studied. The efficacy of the basic procedure (as investigated in the present study) may be compared with the efficacy of a procedure substituting an electric shock for the vocal response "Stop!" A similar variation utilizing an electric shock might be investigated. The client is instructed to withstand an electric shock administered to his arm as long as possible while "ruminating" at the same time. He then shouts "Stop!" at which point the shock and hopefully the ruminating as well are terminated. By pairing the shock with the unpleasant

thoughts, the "stop" response is similar to an "anxiety relief" response in that the termination of an unpleasant stimulus is said to be reinforcing.

In short, the thought-stopping technique and variations of it may be potentially applied to many maladaptive responses. The efficacy of the technique in other settings, however, is open to further investigation.

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APPENDIX A

INITIAL SCREENING DEVICE

TAVISTOCK "B" ITEMS

		yes	no
1.	I frequently find that a tune keeps recurring in my head for a long time.	___	___
2.	I tend to worry for a long time over humiliating experiences.	___	___
3.	I often ask myself, "Have I done right?"	___	___
4.	I often have to check up to see whether I have closed a door or switched off a light.	___	___
5.	I dislike making hurried decisions.	___	___
6.	I find myself getting behind with things in general.	___	___
7.	I tend to brood for a long time over a single idea.	___	___
8.	I usually find it difficult to get started on things I have to do.	___	___
9.	I find it difficult to make up my mind, even about unimportant things.	___	___
10.	I am often inwardly compelled to do certain things even though my reason tells me it is not necessary.	___	___
11.	I am slow in deciding on a course of action.	___	___
12.	I find I have sometimes to memorize numbers or count things that are not important.	___	___
13.	At times I feel the compulsion to count things.	___	___
14.	I sometimes find myself compelled to walk or step over cracks in the pavement in a special way.	___	___
15.	I find I have to stop and think before doing even the smallest thing.	___	___

		yes	no
16.	I am troubled by bad and dirty thoughts.	___	___
17.	I sometimes get bad words in my mind and find it difficult to get rid of them.	___	___

COMPOSITE SCALE

		yes	no
1.	Most nights when I go to bed, I am bothered by certain thoughts or ideas.	___	___
2.	Evil or bad thoughts often pop into my mind and it is almost impossible to get rid of them.	___	___
3.	Do ideas run through your head so you cannot sleep?	___	___
4.	Have you ever been bothered by having a useless thought come into your mind repeatedly?	___	___
5.	Bad words, often terrible words, come into my mind and I cannot get rid of them.	___	___
6.	Sometimes some unimportant thought will run through my mind and bother me for days.	___	___
7.	I have a habit of counting things that are not important such as bulbs on electric signs, and so forth.	___	___
8.	Are you often inwardly compelled to do certain things even though your reason tells you it is not necessary?	___	___
9.	Do unpleasant or frightening thoughts or words ever keep going over and over in your mind?	___	___
10.	Do you ever have persistent imaginings that your children or husband might be having an accident or that something might have happened to them?	___	___
11.	Have you ever been troubled by certain thoughts or ideas of harming yourself of persons in your family--thoughts which come and go without any particular reason?	___	___

APPENDIX B

RECORD OF INDIVIDUAL SUBJECTS DURING TREATMENT PHASE

KEY

Subject number - No.

Age (years-nearest month) - Age.

Sex (male) - m.

Sex (female) - f.

Group - A or B.

Target Coverants - T. C.

Initial Operant Level of Unwanted Thoughts - I. O.

Final Operant Level of Unwanted Thoughts - F. O.

Pre-Treatment Tavistock-Composite Scale Score - T. C. -1

Post-Treatment Tavistock-Composite Scale Score - T. C. -2

Pre-Treatment IPAT Anxiety Scale Score - A - 1

Post-Treatment IPAT Anxiety Scale Score - A - 2.

No.	Age (yr-mo)	Sex	Group	T. C.	I.O.	F.O.	TC-1	TC-2	A-1	A-2
1.	30- 1	f	B	Worrying about exam performance before and after writing	68	91	14	14	38	27
2.	39-10	m	A	Counting street signs	15	0	14	8	27	30
3.	21- 6	f	A	Worry about grades in school	26	16	16	15	40	40
4.	38- 4	f	A	Worry about grades and school performance	33	9	13	3	34	22
5.	21- 2	f	B	Worrying about yesterday's events, e.g., Did I do o.k?	24	10	15	15	29	30
6.	20- 1	f	A	Counting things, e.g., cars on a street, letters in a word	11	5	13	10	50	26
7.	28- 5	f	A	Asking little questions all day, e.g., Should I go to the store?	24	8	20	7	53	35

CONTINUED ...

No.	Age (yr-mo)	Sex	Group	T. C.	I.O.	F.O.	TC-1	TC-2	A-1	A-2
8.	22- 0	f	B	Worry about school performance, so I can't study	11	1	13	14	51	47
9.	21- 0	m	B	Recurring tunes, worry about past events (Have I done o.k.?)	22	9	20	12	18	18
10.	19- 1	f	B	I think someone will get me when I am alone in the dark.	13	5	23	24	49	46
11.	22- 9	f	B	Say telephone numbers over and over.	13	5	13	14	38	56
12.	24- 1	f	A	Count things (Cars, cracks in wall)	13	3	18	16	29	35
13.	43-11	f	A	Imagine children had an accident	14	5	13	1	26	19
14.	40- 0	m	A	Worry about my car, will it last?	103	18	14	17	46	46
15.	21- 5	m	A	Recurring tunes. Think about horses for no reason.	87	11	13	5	38	26
16.	21- 1	f	B	Worry about doing alright in school.	9	18	13	13	32	21

No.	Age (yr-mo)	Sex	Group	T. C.	I.O.	F.O.	TC-1	TC-2	A-1	A-2
17.	20- 0	f	B	Worry about test performance	7	3	14	9	39	33
18.	21- 7	f	A	Think about what Mother says all day	20	9	14	5	24	28
19.	22- 2	m	A	Worry about exams so I can't study	9	6	18	8	33	11
20.	25- 0	f	B	Think about death	31	9	18	20	37	53
21.	20- 6	f	B	Recurring tunes	8	8	21	21	46	48
22.	22- 0	m	A	Think about performing in front of my music teacher when I practice	15	8	18	17	29	40
23.	22- 3	f	B	Think about dying	26	13	20	15	59	50
24.	23- 1	f	A	Worry about money, will I have enough?	28	3	21	13	60	36
25.	36- 7	f	B	Think that I am not "as good" as other people	115	53	14	14	50	51
26.	22-10	f	B	Recurring tune, "Mash" theme; repeating poetry to myself all day	10	7	17	16	44	38

No.	Age (yr-mo)	Sex	Group	T. C.	I.O.	F.O.	TC-1	TC-2	A-1	A-2
27.	21- 3	m	A	Recurring tune; worry about embarrasing events	48	23	24	16	60	39
28.	26- 4	f	B	Count useless things (cracks in walls, etc.)	11	8	15	18	35	41
29.	38- 0	m	B	Think about day's work all night, can't relax	20	20	16	9	62	43

APPENDIX C

QUESTIONS ASKED TO CLIENTS DURING INITIAL INTERVIEW TO SUBSTANTIATE THE EXISTENCE OF UNWANTED THOUGHTS

1. The number of affirmative answers you gave to items on the objective test that was filled out in class indicated that certain thoughts may recur in your mind over and over again. Can you verbalize at this time or put into words one of those thoughts for me?

2. Do you want to be thinking these thoughts?

3. Does it trouble you when you think such a thought and cannot get rid of it?

4. When do you think these thoughts or do they recur spontaneously?

5. Can you say if these thoughts serve any useful purpose or do they interfere with other activities?